

P A T E N T

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Bobby Hu

Serial No : Continuation of Ser. No.  
09/541,193

Filed : August 29, 2001

Title : BIASING ARRANGEMENT  
FOR A PAWL OF A  
REVERSIBLE RATCHET-  
TYPE WRENCH

Docket No : 15722-209CON  
(formerly CFP-1080CA)

Commissioner for Patents and Trademarks  
Washington, D.C. 20231

PRELIMINARY AMENDMENT

Dear Sir:

Please amend the above application as follows:

IN THE DRAWINGS

Permission is requested to amend Figure 2 according to the attached copy showing the desired changes marked in red.

IN THE SPECIFICATION

Page 1, line 2, before "Background of the Invention" insert:

-- Cross Reference

This application is a continuation of Serial No. 09/541,193 filed April 3, 2000, now U.S. Patent No. 6,282,992.--.

Please amend page 1, lines 8-18 as follows:

U.S. Patent No. 2,957,377 issued to Hare on Oct. 25, 1960 discloses a reversible

ratchet-type wrench comprising a body 10 having a handle 11 and a head 12. A cap 39 and an annular wall 44 are provided to the upper side and the lower side of the head 12, respectively. Yet, this increases the assembly time and the manufacture cost and adversely affects the appearance. A shifting lever 35 is retained in place by a spring 33 that is located in a cylindrical opening 34. Nevertheless, formation of the cylindrical opening 34 that extends upward at an incline is relatively difficult. In addition, formation of the cavity 16 having converging straight sides 17, 18 which diverge in the direction of the periphery of the rotatable member 14 requires expensive and accurate computer-numeric-control (CNC), which further results in an increase in the cost together with a low production rate. This is why such a reversible ratchet-type wrench is hardly seen in the market.

Please amend page 7, lines 17-23 as follows:

A drive member (in the form of a gear wheel 20 in this embodiment) is mounted in the head 11 and includes an inner periphery 24 for driving a fastener (not shown) and an outer periphery 25. The outer periphery 25 includes a recessed upper end portion 22, a lower end portion 23, and a middle portion with a plurality of recessed teeth 21. The lower end portion 23 includes an annular groove 231. A C-clip 30 is received in the annular groove 231 of the lower end portion 23 and the annular groove 131 of the head 11, thereby rotatably retaining the gear wheel 20 in the head 11 of the wrench 10, best shown in Fig. 2.

Please amend page 8, lines 10-18 as follows:

In assembly, the switch member 50 is mounted in the compartment 15 and the biasing means 60 is mounted into the receptacle 521 of the switch member 50 via the cavity 14 with the elastic element 62 surrounding a part of the peg 61. The end 612 of the peg 61 bears against the first end 621 of the elastic element 62. The pawl 40 is mounted into the cavity 14 with the other

end 611 of the peg 61 extended into the recess 42 of the pawl 40. The C-clip 30 is placed into the hole 13 and the gear wheel 20 is then mounted in the hole 13 with the C-clip 30 received in the annular grooves 131 and 231, thereby completing the assembly. Thus, the assembly procedure is simple and can be accomplished quickly by a C-clip 30 without the aid of any screw or cover.

Please amend page 9, lines 4-22 as follows:

Fig. 7 illustrates a second embodiment in accordance with the present invention, wherein the gear wheel 20 is replaced by a drive member 70 having a drive column 73 with an engaging means 80 for releasably engaging with a socket (not shown). The drive member 70 includes an outer periphery having a plurality of teeth 71 for engaging with the ratchet teeth 41. An annular groove 731 is defined in a lower portion of the outer periphery of the drive member 70 for engaging with the C-clip 30, which is identical to that disclosed above. In addition, the drive member 70 includes a stub 72 on a top thereof, and the upper portion of the head 11 is modified to include an end wall 133 with an opening 134 for rotatably receiving the stub 72 of the drive member 70, thereby providing stable rotational movement for the drive member 70.

Fig. 8 illustrates a third embodiment in accordance with the present invention. It is noted that the biasing means (now designated by 90) in this embodiment includes a pin 91 having a receptacle 911 for receiving an end of the elastic element 92. Thus, the elastic element 92 is attached between an end wall (not labeled) defining the receptacle 911 of the pin 91 and an end wall (not labeled) defining the receptacle 521 of the switch member 50.

#### IN THE CLAIMS

Please cancel claims 1-20 without prejudice.

Please amend claim 21 as follows:

21. A reversible ratchet-type wrench comprising:

a handle;

a head extended from the handle;

a drive member rotatably mounted in the head, with the drive member including a plurality of teeth formed on an outer periphery thereof;

a pawl including a first side with a plurality of ratchet teeth for releasably engaging with the teeth of the drive member, with the pawl further including a second side with a recess;

a switch member including a turn-piece for manual operation and an actuating plate extended from the turn-piece and rotatably received in the head, the switch member being switchable between two positions for changing ratcheting direction of the drive member, with the actuating plate of the switch member including a first receptacle that faces the recess of the pawl and that has a first end wall;

an elastic element; and

a peg, with the peg having a first end movably received in the recess of the pawl and a second end, with the second end of the peg being received in the first receptacle and including a second receptacle with a second end wall, with the elastic element located between the first end wall and the second end wall, with the peg and the elastic member being rotatable with the actuating plate and biasing the ratchet teeth of the pawl to engage with the teeth of the drive member.

Please amend claim 25 as follows:

25. The reversible ratchet-type wrench as claimed in claim 21, with the drive member being rotatably mounted in a hole of the head, wherein an inner periphery defining the hole of the head includes a first annular groove, and wherein the outer periphery of the drive member includes a second annular groove, with the reversible ratchet-type wrench further comprising a

C-clip received in the first annular groove and the second annular groove, thereby rotatably retaining the drive member in the head.

Please cancel claims 26-39 without prejudice.

Please add the following claims 40-53:

40. The reversible ratchet-type wrench as claimed in claim 25, wherein the drive member includes a top and a bottom, with the outer periphery extending between the top and the bottom, with the second annular groove being spaced from the top and the bottom.

41. The reversible ratchet-type wrench as claimed in claim 21, with the actuating plate extending axially from the turn-piece.

42. A handle for a ratcheting tool comprising, in combination: a head having a first face and a second face; a hole in the head extending between the first face and the second face; a cavity being defined in the head between and spaced from the first and second faces and communicated with the hole, with the cavity including planar ends extending generally parallel to and spaced from the first and second faces, with first and second wall sections being defined between the planar ends and the first and second faces and being integral with the handle; and a compartment defined in the head and extending from the second face towards but spaced from the first face and having a first end communicated with the cavity and a second end communicated with outside at the second face, thereby leaving an integral bridge in the second end wall section of the head at the second face and located between the hole of the head and the second end of the compartment.

43. The ratcheting tool handle as claimed in claim 42, further comprising, in combination: an end wall within the hole and integral with the head, with the end wall defining an opening, with the opening having a smaller diameter than the hole and being concentrically

within the hole.

44. The ratcheting tool handle as claimed in claim 43, with the end wall having an outer face which is contiguous with one of the first and second faces of the head.

45. The ratcheting tool handle as claimed in claim 44, with the outer face of the end wall being flush with the second face.

46. The ratcheting tool handle as claimed in claim 44, further comprising, in combination: a drive member rotatably mounted in the hole of the head, with the drive member including an outer periphery and a bottom, with the bottom having an annular shoulder extending from the outer periphery, with the bottom being contiguous with the outer face of the end wall and the end wall being received in the annular shoulder of the drive member.

47. The ratcheting tool handle as claimed in claim 46, with the drive member including an inner periphery adapted to drive a fastener.

48. The ratcheting tool handle as claimed in claim 47, further comprising, in combination: a first annular groove included in an inner periphery defining the hole and spaced from the first and second faces, with the drive member including a top; a second annular groove included in the outer periphery of the drive member and spaced from the top and the bottom; and a C-clip received in the first annular groove and the second annular groove, thereby rotatably retaining the drive member in the hole.

49. The ratcheting tool handle as claimed in claim 43, wherein the cavity further includes an arcuate wall extending from intersecting points with the hole and generally perpendicular to the first and second faces, with the first and second end wall sections being defined between the arcuate wall and the hole, with the arcuate wall having a radius from a center and less than that of the hole, with the center of the arcuate wall located in the hole and with the

intersecting points being spaced less than two times the radius.

50. The ratcheting tool handle as claimed in claim 43, further comprising, in combination: a drive member rotatably mounted in the hole and including a drive column extending from the hole beyond the first face and for releasably engaging with a socket, with the drive member further including a stub rotatably received in the opening in the integral end wall.

51. The ratcheting tool handle as claimed in claim 50, further comprising, in combination: a first annular groove included in an inner periphery defining the hole and spaced from the first and second faces, with the drive member including a top from which the stub extends and a bottom from which the drive column extends; a second annular groove included in an outer periphery of the drive member and spaced from the top and the bottom, and a C-clip received in the first annular groove and the second annular groove, thereby rotatably retaining the drive member in the hole.

52. The ratcheting tool handle as claimed in claim 42, wherein the cavity further includes an arcuate wall extending from intersecting points with the hole and generally perpendicular to the first and second faces, with the first and second end wall sections being defined between the arcuate wall and the hole, with the arcuate wall having a radius from a center and less than that of the hole, with the center of the arcuate wall located in the hole and with the intersecting points being spaced less than two times the radius.

53. The ratcheting tool handle as claimed in claim 42, with the second face being planar completely around the hole and the compartment.

#### REMARKS

For the convenience of the United States Patent and Trademark Office, the documents cited in the parent U.S. application have been listed in the attached PTO Form 1449. As copies

of these documents listed on the attached PTO Form 1449 are located in the parent U.S. application, duplicate copies have not been provided herein. Additionally, the documents cited in companion U.S. application 09/541,190, now U.S. Patent No. 6,282,991, having the same filing date as and simultaneously prosecuted with the parent application are enclosed herewith and listed on the attached PTO Form 1449 form so that consideration is of record in this application. The documents listed and the disclosures provided in the specification of the above application include the closest information of which applicant and his attorneys are aware, and known information more material than that which is disclosed has not been withheld.

Favorable consideration is respectfully requested.


It is believed that the application is in condition for allowance and such action is respectfully requested. If any points remain in issue which the Examiner feels could best be resolved by either a personal or telephone interview, he is urged to contact Applicant's attorney at the exchange listed below.

Respectfully submitted,

Bobby Hu

Dated: August 29, 2001

By

  
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**VERSION WITH MARKINGS TO SHOW CHANGES MADE**

**IN THE SPECIFICATION**

Page 1, lines 8-18 have been amended as follows:

U.S. Patent No. 2,957,377 issued to Hare on Oct. 25, 1960 discloses a reversible ratchet-type wrench comprising a body 10 having a handle 11 and a head 12. A cap 39 and an annular wall 44 are provided to **the** upper side and **the** lower side of the head 12, respectively. Yet, this increases the assembly time and the manufacture cost and adversely affects the appearance. A shifting lever 35 is retained in place by a spring 33 that is located in a cylindrical opening 34. Nevertheless, formation of the cylindrical opening 34 that extends **[inclined upward] upward at an incline** is relatively difficult. In addition, formation of the cavity 16 having converging straight sides 17, 18 which diverge in the direction of the periphery of **the** rotatable member 14 requires expensive and accurate computer-numeric-control (CNC), which further results in an increase in the cost together with a low production rate. This is why such **a** reversible ratchet-type wrench is hardly seen in the market.

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Page 8, lines 10-18 have been amended as follows:

In assembly, the switch member 50 is mounted in the compartment 15 and the biasing means 60 is mounted into the receptacle 521 of the switch member 50 via the cavity 14 with the elastic element 62 surrounding a part of the peg 61. The end 612 of the peg 61 bears against the first end 621 of the elastic element 62. The pawl 40 is mounted into the cavity 14 with the other end [612] 611 of the peg 61 extended into the recess 42 of the pawl 40. The C-clip 30 is placed into the hole [132] 13 and the gear wheel 20 is then mounted in the hole [132] 13 with the C-clip 30 received in the annular grooves 131 and 231, thereby completing the assembly. Thus, the assembly procedure is simple and can be accomplished quickly by a C-clip 30 without the aid of any screw or cover.

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Fig. 8 illustrates a third embodiment in accordance with the present invention. It is noted that the biasing means (now designated by 90) in this embodiment includes a pin [92 that is] 91 having a receptacle 911 for receiving an end of the elastic element 92. Thus, the elastic element 92 is attached between an end wall (not labeled) defining the receptacle 911 of the pin [92] 91

and an end wall (not labeled) defining the receptacle 521 of the switch member 50.

## **IN THE CLAIMS**

Claim 21 has been revised as follows:

21. A reversible ratchet-type wrench comprising:

a handle;

a head extended from the handle **[and including a hole, a web being defined between the handle and the head, a cavity being defined in the web and communicated with the hole, the web further including a compartment communicated with the cavity];**

a drive member rotatably mounted in the **[hole of the]** head, **with** the drive member including a plurality of teeth formed on an outer periphery thereof;

a pawl **[mounted in the cavity and]** including a first side with a plurality of ratchet teeth for releasably engaging with the teeth of the drive member, **with** the pawl further including a second side with a recess;

a switch member including a turn-piece for manual operation and an actuating plate extended from the turn-piece and rotatably received in the **[compartment of the web]** **head**, the switch member being switchable between two positions for changing ratcheting direction of the drive member, **with the actuating plate of the switch member including a first receptacle that faces the recess of the pawl and that has a first end wall; [and]**

**[a biasing means mounted in the cavity and between the recess of the pawl and the actuating plate for biasing the ratchet teeth of the pawl to engage with the teeth of the drive member, the biasing means including]** an elastic element; and

a peg, **with** the peg having a first end movably received in the recess of the pawl and a

second end, [the elastic element biasing the second end of the peg for exerting a force to the peg toward the pawl, thereby urging the ratchet teeth of the pawl to engage with the teeth of the gear wheel;

the actuating plate of the switch member including a first receptacle that faces the cavity, the first receptacle having a first end wall,] with the second end of the peg being received in the first receptacle and including a second receptacle with a second end wall, with the elastic element [having two ends that are attached] located between the first end wall and the second end wall, with the peg and the elastic member being rotatable with the actuating plate and biasing the ratchet teeth of the pawl to engage with the teeth of the drive member.

Claim 25 has been revised as follows:

25. The reversible ratchet-type wrench as claimed in claim 21, with the drive member being rotatably mounted in a hole of the head, wherein an inner periphery defining the hole of the head includes a first annular groove, and wherein the outer periphery of the drive member includes a second annular groove, with the reversible ratchet-type wrench further comprising a C-clip received in the first annular groove and the second annular groove, thereby rotatably retaining the drive member in the head.

P A T E N T

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Title : BIASING ARRANGEMENT  
FOR A PAWL OF A  
REVERSIBLE RATCHET-  
TYPE WRENCH

Docket No : 15722-209CON  
(formerly CFP-1080CA)

Commissioner for Patents and Trademarks  
Washington, D.C. 20231

**TRANSMITTAL OF FORMAL DRAWINGS**

Sir:

Transmitted herewith is one (1) sheet of formal drawings of Figure 2 for the above-identified application.

The fees have been calculated and no further fees are believed to be required. The Commissioner is hereby authorized to charge any deficiency or credit any overpayment to Deposit Account No. 50-1188.

Respectfully submitted,

Bobby Hu

Dated: August 29, 2001

By: 

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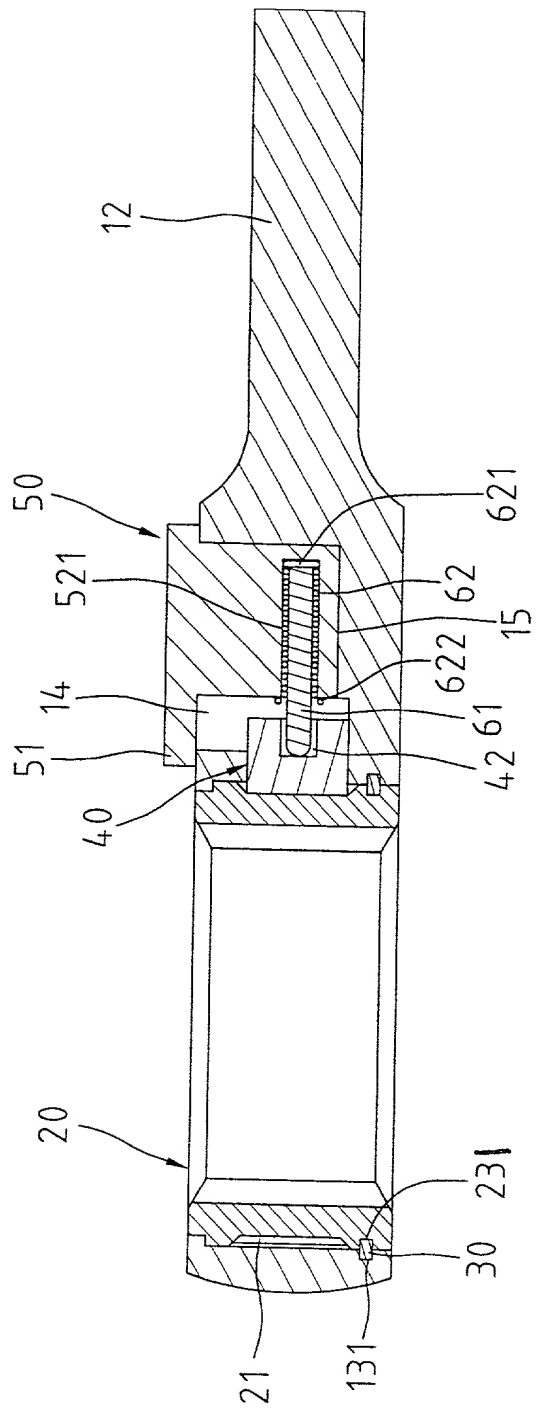


Fig. 2

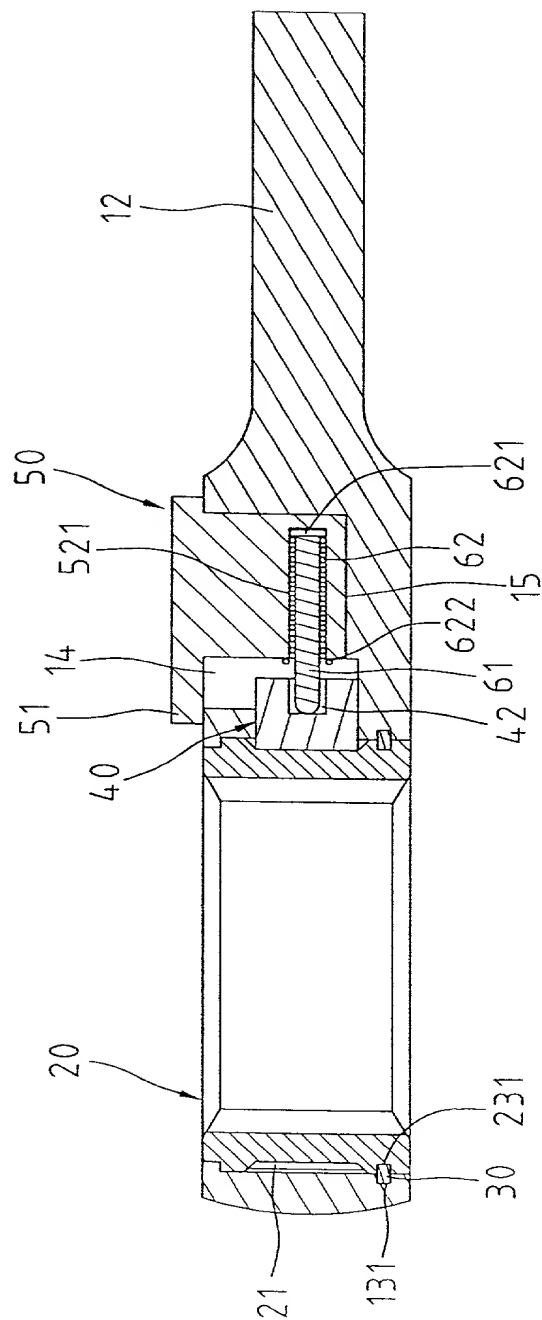


Fig. 2